CLAIMS

1. A fluidic microsystem comprising:
   - at least one channel (10) through which a particle suspension can flow; and
   - first and second electrode devices (40, 60) which are arranged on first and second channel walls (21, 31) for generating electrical alternating-voltage fields in the channel (10); wherein
   - the first electrode device (40) for field shaping in the channel comprises at least one first structure element (41, 51); and
   - the second electrode device (60) comprises an area-like second electrode layer (61) with a closed second electrode surface which comprises a second passivation layer (70),

   characterized in that
   - the effective electrode surface of the first structure element (41, 51), of which element (41, 51) there is at least one, is smaller than the second electrode surface; and
   - the second passivation layer (70) is a closed layer which completely covers the second electrode layer (61).

2. The microsystem according to claim 1, in which the first electrode device (40) comprises at least one structured partial electrode (41) which forms the first structure element, of which there is at least one.

3. The microsystem according to claim 2, in which the first electrode device, by way of partial electrodes (41), comprises individually controllable electrode strips.

4. The microsystem according to claim 1, in which the first electrode device (40) comprises an area-like electrode layer (42) with a closed first electrode surface which comprises a first, closed, passivation layer (50), wherein the first passivation layer (50) comprises first layer structures (51) which form the first structure element, of which there is at least one.

5. The microsystem according to any one of the preceding claims, in which the passivation layer (70) of the second electrode device (60) comprises at least one second structure element for field shaping in the channel (10), which element is formed by layer structures (71) in the passivation layer (70) of the second electrode device (60).

6. The microsystem according to any one of the preceding claims, in which the first and/or second layer structures comprise regions (51, 71) of changed thickness in the passivation layer (50, 70).

7. The microsystem according to any one of the preceding claims, in which the first and/or second layer structures comprise regions (51, 71) that contain at least one material that differs from the material of the remaining surrounding first and/or second passivation layer (50, 70).

8. The microsystem according to one of the preceding claims 6 or 7, in which the regions (51, 71) are inhomogeneous with a thickness gradient and/or a material gradient.

9. The microsystem according to any one of the preceding claims, in which the first and/or second passivation layer (50, 70) comprise/s several layers.

10. The microsystem according to any one of the preceding claims, in which the first and/or second passivation layer (50, 70) are/is at least partly formed by a layer material whose dielectric characteristics are reversibly or irreversibly changeable.

11. The microsystem according to any one of the preceding claims, in which a third electrode device (90) is provided for generating electrical direct-voltage fields or direct-voltage pulses in the channel (10) or in the transverse channel (13) which branches off from the channel (10).

12. The microsystem according to any one of the preceding claims 1 to 10, in which an external electrode device is provided for generating electrical direct-voltage fields or direct-voltage pulses in the channel (10) or in the transverse channel (13) which branches off from the channel (10).

13. A method for field shaping in a channel (10) of a fluidic microsystem (100), in particular according to any one of the preceding claims, in which the geometric shape of electrical fields in the channel (10) is determined by the geometric shape of layer structures in passivation layers (50, 70) in which there is a modified field transconductance.